

Time Value of Money

Money	500					
	2019	2020	2021	2022	2023	2024
US\$ in wallet	500	500	500	500	500	500
US\$ in bank	500	500	500	500	500	500
US\$ (deflated)	10000	10000	10000	10000	10000	10000
	10000.0	10000.0	10000.0	10000.0	10000.0	10000.0
Inflation	4%	4%	4%	4%	4%	4%
Interest Rate	0%	0%	0%	0%	0%	0%
Cumulative Interest Rate	1.00	1.00	1.00	1.00	1.00	1.00

Cost of printer ink	5					
	2019	2020	2021	2022	2023	2024
US\$ flat	5	5	5	5	5	5
US\$ inflation	5.20	5.41	5.62	5.85	6.08	6.33
US\$						

Amount of printer ink						
	2019	2020	2021	2022	2023	2024
US\$	100.0	100.0	100.0	100.0	100.0	100.0
US\$	96.2	92.5	88.9	85.5	82.2	79.0
US\$	96.2	92.5	88.9	85.5	82.2	79.0

Real versus Nominal

Costs	At Dec 31					
	2018	2019	2020	2021	2022	2023
US\$ Nominal	1	1	1.00	1.00	1.00	1.00
Inflation Rate	0%	0%	0%	0%	0%	0%
Multiplier		1	1.00	1.00	1.00	1.00

Money available

100

Chocolate Bars

Money Invested

100.0

Chocolate Bars	100.0	0.0	0.0	0.0	0.0	0.0
----------------	-------	-----	-----	-----	-----	-----

US\$ Real (2018)

Money Available
Cost of Choc Bar

2025	2026	2027	2028	2029
500	500	500	500	500
500				
10000	10000	10000	10000	10000
10000.0	10000.0	10000.0	10000.0	10000.0
4%	4%	4%	4%	4%
0%	0%	0%	0%	0%
1.00	1.00	1.00	1.00	1.00

2025	2026	2027	2028	2029
5	5	5	5	5
6.58				

2025	2026	2027	2028	2029
100.0	100.0	100.0	100.0	100.0
76.0				
76.0				

2024	2025	2026	2027	2028
1.00	1.00	1.00	1.00	1.00
0%	0%	0%	0%	0%
1.00	1.00	1.00	1.00	1.00

0.0

0.0

0.0

0.0

0.0

Real and Nominal

	Year 1	Year 2	Year 3	Year 4	Year 5
Real	100	100	100	100	100
Nominal	102.5	105.1	107.7	110.4	113.1
Inflation	2.5%	2.5%	2.5%	2.5%	2.5%

Capex

US\$2019	500
Nominal	539

Oil Price

	Year 1	Year 2	Year 3	Year 4	Year 5
Real	60	60	60	60	60
Nominal	61.2	62.42	63.67	64.95	66.24
Inflation	2%	2%	2%	2%	2%
Oil Price Increase					

Example Discounted Cashflow

Example 1

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Cashflow	-10	-10	-10	20	20	20	20
Discount Factor	1.10	1.21	1.33	1.46	1.61	1.77	1.95
Discounted Cashflow	-9.1	-8.3	-7.5	13.7	12.4	11.3	10.3
NPV (Net Present Value)	48.3						
Discount Rate	10%						
Excel Calculation	48.3						

Example 2

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Capital Cost	-100	-100	-100				
Revenue				100	100	100	100
Operating Cost				-20	-20	-20	-20
Net Cashflow	-100	-100	-100	80	80	80	80
Discount Factor	1.10	1.21	1.33	1.46	1.61	1.77	1.95
Discounted Cashflow	-90.9	-82.6	-75.1	54.6	49.7	45.2	41.1
NPV	233.5						
Discount Rate	10.000%						
IRR	20.93%						
Excel Calculation	233.5						

Internal Rate of Return

Year 8	Year 9	Year 10
20	20	20
2.14	2.36	2.59
9.3	8.5	7.7

Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16
100	100	100	100	100	100	100	100	100
-20	-20	-20	-20	-20	-20	-20	-20	-20
80	80	80	80	80	80	80	80	80
2.14	2.36	2.59	2.85	3.14	3.45	3.80	4.18	4.59
37.3	33.9	30.8	28.0	25.5	23.2	21.1	19.2	17.4

Year 17	Year 18	Year 19	Year 20
100	100	100	100
-20	-20	-20	-20
80	80	80	80
5.05	5.56	6.12	6.73
15.8	14.4	13.1	11.9

WACC Calculation

Risk Free Rate	1.50%		
Corporate Interest Rate	5.00%		
Equity market return	8.00%		
Company Beta	1.75		
Corporate Tax Rate	25%		
Debt:Equity Split	Debt 70%	Equity 30%	
Cost of Debt	3.75%		
Cost of Equity	12.88%		
WACC	6.49%		

An Example Conventional Oil Field

Sensitivities		1	0%
Oil Price	1	2	15%
Production	1	3	30%
Operating Costs & Transport	1	4	-15%
Capex	1	5	-30%

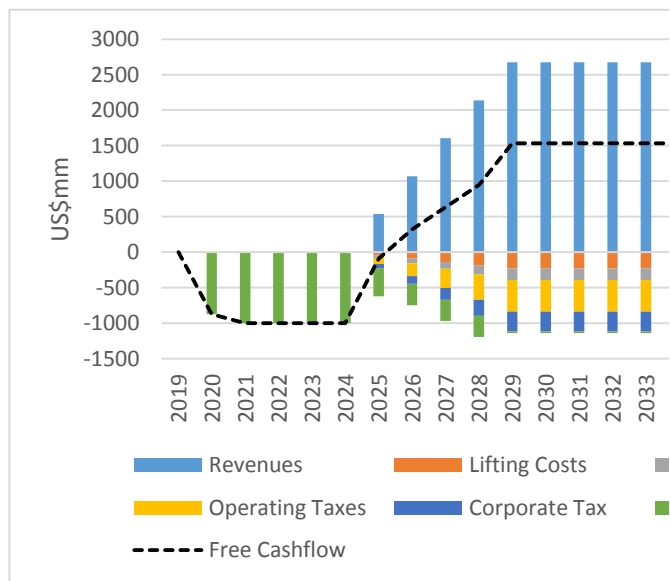
	2019	2020	2021	2022	2023	2024
Revenues	0	0	0	0	0	0
Operating Costs	0	0	0	0	0	0
Transport Costs	0	0	0	0	0	0
Operating Taxes	0	0	0	0	0	0
EBITDA (Pre-tax Cashflow)	0	0	0	0	0	0
Depreciation <i>Straight Line (0) or Unit of Prod (1)</i>	0 1	0	0	0	0	0
EBIT (Post Tax Profit)	0	0	0	0	0	0
Tax on EBIT <i>Corporate Tax Rate</i>	0 20%	0	0	0	0	0
Post tax cashflow	0	0	0	0	0	0
CAPEX	0	-875	-1000	-1000	-1000	-1000
Free Cashflow (FCF)	0	-875	-1000	-1000	-1000	-1000
Cumulative FCF	0	-875	-1875	-2875	-3875	-4875
Discount Rate	4.6%					
Discount Factor	1.00	1.05	1.09	1.14	1.19	1.25
Discounted Cashflow (DCF)	0	-837	-915	-875	-837	-801
NPV (\$mm)	6668					
IRR (%)	13.9%					
Payback (years)	11	When does cumulative cashflow turn positive				
Excel Calculation	\$6,668					

Breakeven Oil Price \$58.00 *After Goal Seek Function in Data:What If*

Alternative NPV (terminal value)						
FCF for 10 years	0	-875	-1000	-1000	-1000	-1000

Terminal Value						
Implied FCF	0	-875	-1000	-1000	-1000	-1000
Implied DCF	0	-837	-915	-875	-837	-801
NPV	7637					
Plus Cash	0					
Less Debt	0					
Total NPV	7637					
IRR	19%					
<i>EBITDA Multiple</i>	<i>8.6</i>					

	2019	2020	2021	2022	2023	2024
Revenues	0	0	0	0	0	0
Lifting Costs	0	0	0	0	0	0
Transport	0	0	0	0	0	0
Operating Taxes	0	0	0	0	0	0
Corporate Tax	0	0	0	0	0	0
Capex	0	-875	-1000	-1000	-1000	-1000
Free Cashflow	0	-875	-1000	-1000	-1000	-1000



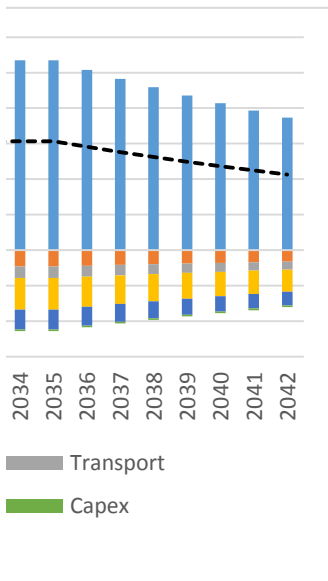
Base
High
Upside
Low
Downside

Results
NPV 6668 US\$mm
IRR 14% %

2025	2026	2027	2028	2029	2030	2031	2032	2033
535	1070	1605	2140	2675	2675	2675	2675	2675
-46	-92	-138	-184	-230	-230	-230	-230	-230
-33	-65	-98	-131	-164	-164	-164	-164	-164
-89	-178	-268	-357	-446	-446	-446	-446	-446
367	734	1101	1468	1835	1835	1835	1835	1835
-88	-176	-265	-353	-441	-441	-441	-441	-441
279	558	836	1115	1394	1394	1394	1394	1394
-56	-112	-167	-223	-279	-279	-279	-279	-279
311	623	934	1245	1556	1556	1556	1556	1556
-400	-300	-300	-300	-23	-23	-23	-23	-23
-89	323	634	945	1533	1533	1533	1533	1533
-4964	-4641	-4007	-3062	-1529	4	1537	3070	4603
1.31	1.37	1.43	1.49	1.56	1.63	1.71	1.78	1.86
-68	236	444	633	983	940	899	860	822
-89	323	634	945	1533				

					15782
-89	323	634	945	1533	15782
-68	236	444	633	983	9674

2025	2026	2027	2028	2029	2030	2031	2032	2033
535	1070	1605	2140	2675	2675	2675	2675	2675
-46	-92	-138	-184	-230	-230	-230	-230	-230
-33	-65	-98	-131	-164	-164	-164	-164	-164
-89	-178	-268	-357	-446	-446	-446	-446	-446
-56	-112	-167	-223	-279	-279	-279	-279	-279
-400	-300	-300	-300	-23	-23	-23	-23	-23
-89	323	634	945	1533	1533	1533	1533	1533



2034	2035	2036	2037	2038	2039	2040	2041	2042
2675	2675	2541	2414	2293	2178	2069	1966	1868
-230	-230	-218	-207	-197	-187	-178	-169	-160
-164	-164	-155	-148	-140	-133	-127	-120	-114
-446	-446	-424	-403	-383	-363	-345	-328	-312
1835	1835	1743	1656	1573	1495	1420	1349	1282
-441	-441	-419	-398	-378	-359	-341	-324	-308
1394	1394	1324	1258	1195	1135	1079	1025	973
-279	-279	-265	-252	-239	-227	-216	-205	-195
1556	1556	1479	1405	1334	1268	1204	1144	1087
-23	-23	-23	-23	-23	-23	-23	-23	-23
1533	1533	1455	1381	1311	1244	1181	1121	1064
6136	7669	9125	10506	11817	13062	14243	15364	16427
1.95	2.04	2.13	2.23	2.33	2.43	2.55	2.66	2.78
787	752	683	620	563	511	464	421	382

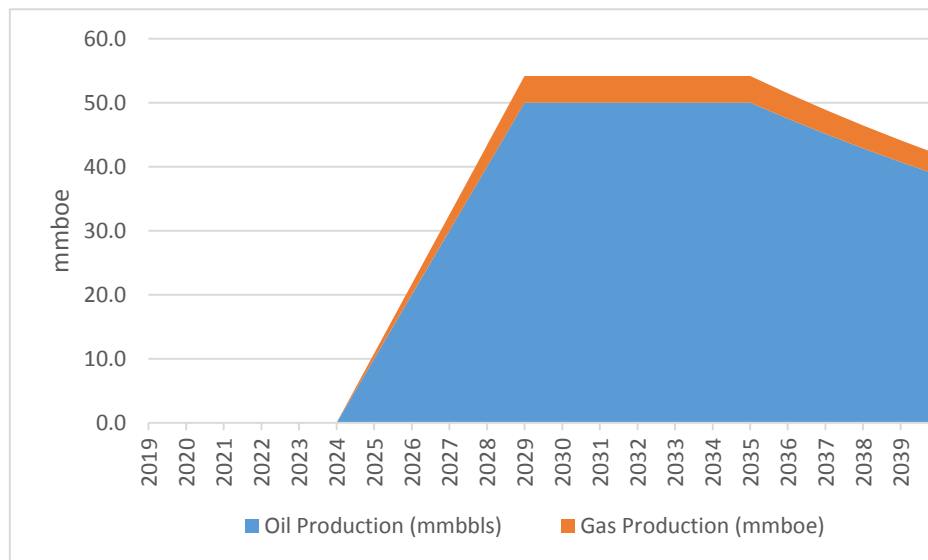
2034	2035	2036	2037	2038	2039	2040	2041	2042
2675	2675	2541	2414	2293	2178	2069	1966	1868
-230	-230	-218	-207	-197	-187	-178	-169	-160
-164	-164	-155	-148	-140	-133	-127	-120	-114
-446	-446	-424	-403	-383	-363	-345	-328	-312
-279	-279	-265	-252	-239	-227	-216	-205	-195
-23	-23	-23	-23	-23	-23	-23	-23	-23
1533	1533	1455	1381	1311	1244	1181	1121	1064

Production

	Oil		
	mmbbls	kbpd	
Resources	0		
Recovery Factor	0%		
Reserves	1000		
Start date	5 years		Peak as %
	after first		Reserves
	capex		
Peak Production (mmbbls)	50	137	5%
Time to Peak (yrs)	4		
Length of Peak (yrs)	7		
Decline rate (%)	5%		

	<i>First capex</i>					
	2019	2020	2021	2022	2023	2024
Oil production	0.00	0.00	0.00	0.00	0.00	0.00
Total oil produced to 2040	736.6					
Barrels per day		0	0	0	0	0
Gas Production	0.00	0.00	0.00	0.00	0.00	0.00
Total gas produced to 2040	368.3					

	2019	2020	2021	2022	2023	2024
Oil Production (mmbbls)	0.0	0.0	0.0	0.0	0.0	0.0
Gas Production (mmboe)	0.0	0.0	0.0	0.0	0.0	0.0
Total (mmboe)	0.0	0.0	0.0	0.0	0.0	0.0



Production Scenarios

Total Produced

Oil Production Scenarios

1	736.58
2	847.07
3	957.55
4	626.09
5	515.61

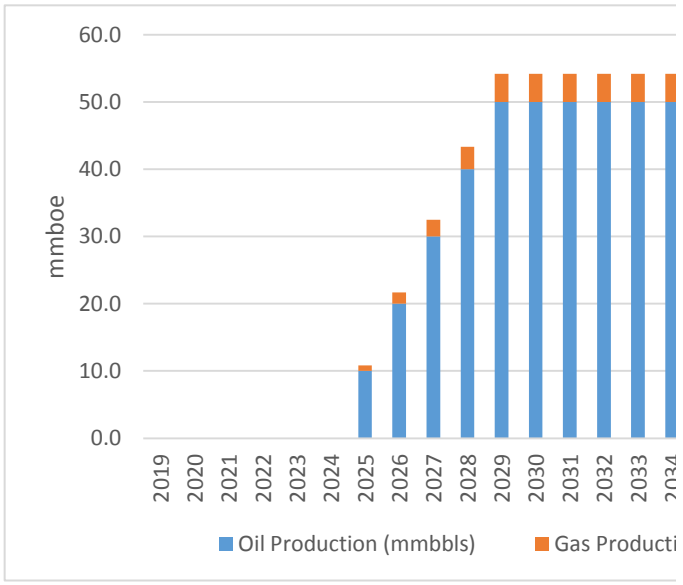
Gas Production Scenarios

1	368.29
2	423.53
3	478.78
4	313.05
5	257.80

Gas		Total
Bcf	mmcfd	mmboe
500		1083
5 years after first capex		
25	68	
4		
7		
5%		

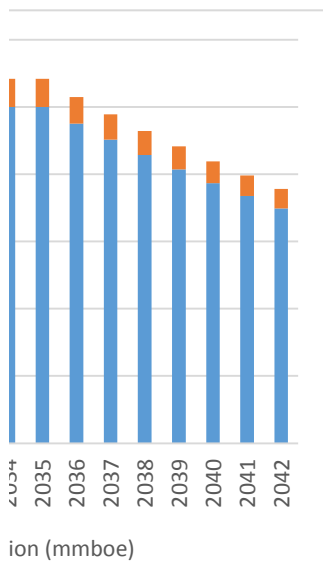
1st year				Peak Oil					
2025	2026	2027	2028	2029	2030	2031	2032	2033	
10.00	20.00	30.00	40.00	50.00	50.00	50.00	50.00	50.00	50.00
27397	54795	82192	109589	136986	136986	136986	136986	136986	136986
5.00	10.00	15.00	20.00	25.00	25.00	25.00	25.00	25.00	25.00

2025	2026	2027	2028	2029	2030	2031	2032	2033
10.0	20.0	30.0	40.0	50.0	50.0	50.0	50.0	50.0
0.8	1.7	2.5	3.3	4.2	4.2	4.2	4.2	4.2
10.8	21.7	32.5	43.3	54.2	54.2	54.2	54.2	54.2



2034	2035	2036	2037	2038	2039	2040	2041	2042
50.00	50.00	47.50	45.13	42.87	40.73	38.69	36.75	34.92
136986	136986	130137	123630	117449	111576	105997	100698	95663
25.00	25.00	23.75	22.56	21.43	20.36	19.34	18.38	17.46

2034	2035	2036	2037	2038	2039	2040	2041	2042
50.0	50.0	47.5	45.1	42.9	40.7	38.7	36.8	34.9
4.2	4.2	4.0	3.8	3.6	3.4	3.2	3.1	2.9
54.2	54.2	51.5	48.9	46.4	44.1	41.9	39.8	37.8



Domestic Oil Price

Base Case	29.0	29.0	29.0	29.0	29.0	29.0
Scenario 2	33.4	33.4	33.4	33.4	33.4	33.4
Scenario 3	37.7	37.7	37.7	37.7	37.7	37.7
Scenario 4	24.7	24.7	24.7	24.7	24.7	24.7
Scenario 5	20.3	20.3	20.3	20.3	20.3	20.3

Domestic Gas Price

Base Case	4.1	4.1	4.1	4.1	4.1	4.1
Scenario 2	4.7	4.7	4.7	4.7	4.7	4.7
Scenario 3	5.3	5.3	5.3	5.3	5.3	5.3
Scenario 4	3.5	3.5	3.5	3.5	3.5	3.5
Scenario 5	2.8	2.8	2.8	2.8	2.8	2.8

Export Gas Price

Base Case	8.1	8.1	8.1	8.1	8.1	8.1
Scenario 2	9.3	9.3	9.3	9.3	9.3	9.3
Scenario 3	10.6	10.6	10.6	10.6	10.6	10.6
Scenario 4	6.9	6.9	6.9	6.9	6.9	6.9
Scenario 5	5.7	5.7	5.7	5.7	5.7	5.7

Slope 14%

29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
33.4	33.4	33.4	33.4	33.4	33.4	33.4	33.4
37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7
24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7
20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3

4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8

8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3
10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6
6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7

2042

34.9

8.7

26.2

29

58

253

1519

1772

17.5

4.1

8.1

11

6

46

50

96

1868

34.9

40.2 15%

45.4 30%

29.7 -15%

24.4 -30%

17.5

20.1 15%

22.7 30%

14.8 -15%

12.2 -30%

58.0

66.7

75.4

49.3

40.6

29.0
33.4
37.7
24.7
20.3

4.1
4.7
5.3
3.5
2.8

8.1
9.3
10.6
6.9
5.7

Capital Expenditure

Reserves	1083	
Capex per bbl	6.00	
Total capex	6500	
% before first oil	75%	4875
% first oil to peak	20%	1300
Maintenance capex	5%	325

	First Capex					
	2019	2020	2021	2022	2023	2024
US\$mm	0	875	1000	1000	1000	1000
Before first oil	4875					
First oil to peak	1300					
Maintenance	324.8					
Total	6500					

Sensitivities

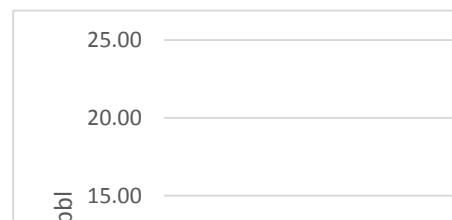
2	0	1006	1150	1150	1150	1150
3	0	1138	1300	1300	1300	1300
4	0	744	850	850	850	850
5	0	613	700	700	700	700
15%						
30%						
-15%						
-30%						

Field Comparisons

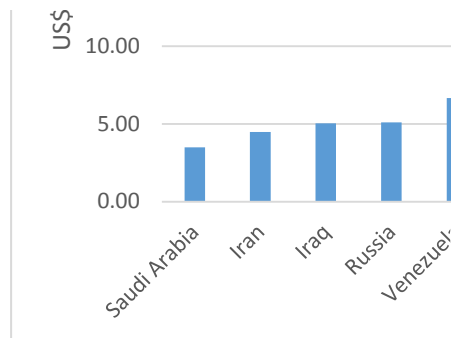
	Cost /bbl	Capex	Reserves	Peak Prod	Peak Prod
	US\$/bbl	US\$mm	mmbbls	kbpd	mmbbls
Kashagan (Kazakhstan)	10.46	136000	13000	1500	547.5
ACG (Azerbaijan)	4.00	20000	5000	620	226.3
Thunderhorse (Gulf of Mexico)	5.00	5000	1000	250	91.25
Novy Port (Russia onshore)	3.25	4500	1385	161	58.64
Ghawar (Saudi)	3.50	248500	71000	5000	1825
Lula (Brazil deep water)	9.04	75000	8300	500	182.5

Global Comparisons

	Capex
	US\$/bbl
Saudi Arabia	3.50
Iran	4.48
Iraq	5.03
Russia	5.10
Venezuela	6.66



US shale	7.56
Indonesia	7.65
US conv	7.70
Canada	9.69
Nigeria	13.10
Norway	13.76
Brazil	16.09
UK	22.67

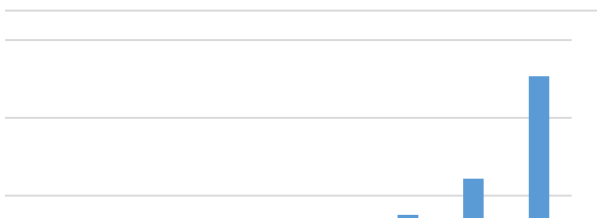
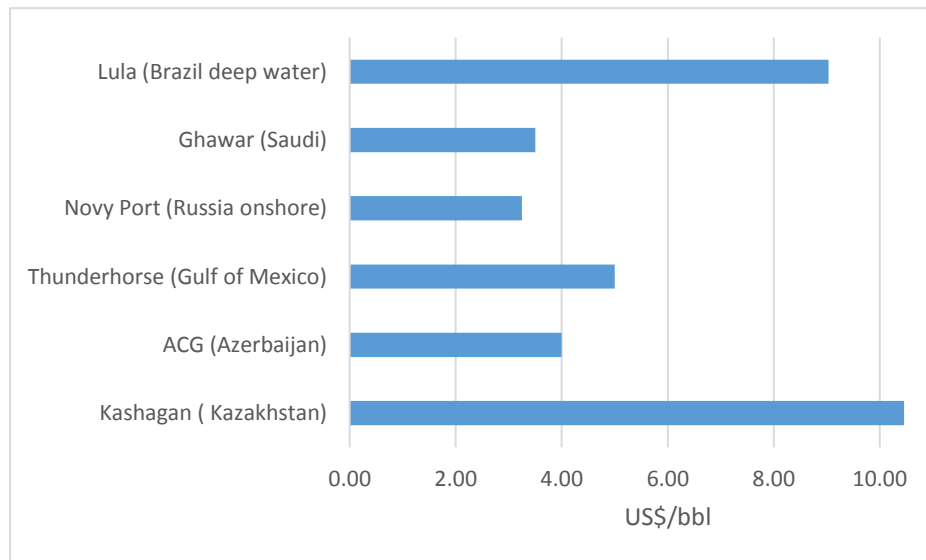


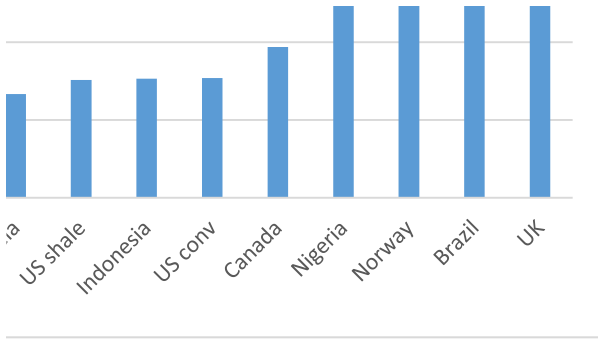
First Oil	Peak Oil							
2025	2026	2027	2028	2029	2030	2031	2032	2033
400	300	300	300	23.2	23.2	23.2	23.2	23.2

460	345	345	345	27	27	27	27	27
520	390	390	390	30	30	30	30	30
340	255	255	255	20	20	20	20	20
280	210	210	210	16	16	16	16	16

Capex/
peak bbl
US\$/bbl

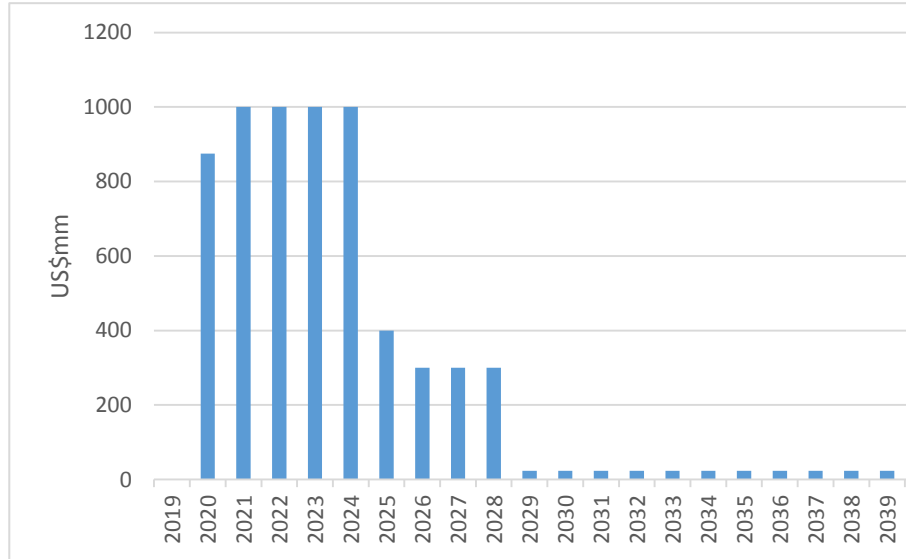
248
88
55
77
136
411





2034	2035	2036	2037	2038	2039	2040	2041	2042
23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2

27	27	27	27	27	27	27	27	27
30	30	30	30	30	30	30	30	30
20	20	20	20	20	20	20	20	20
16	16	16	16	16	16	16	16	16



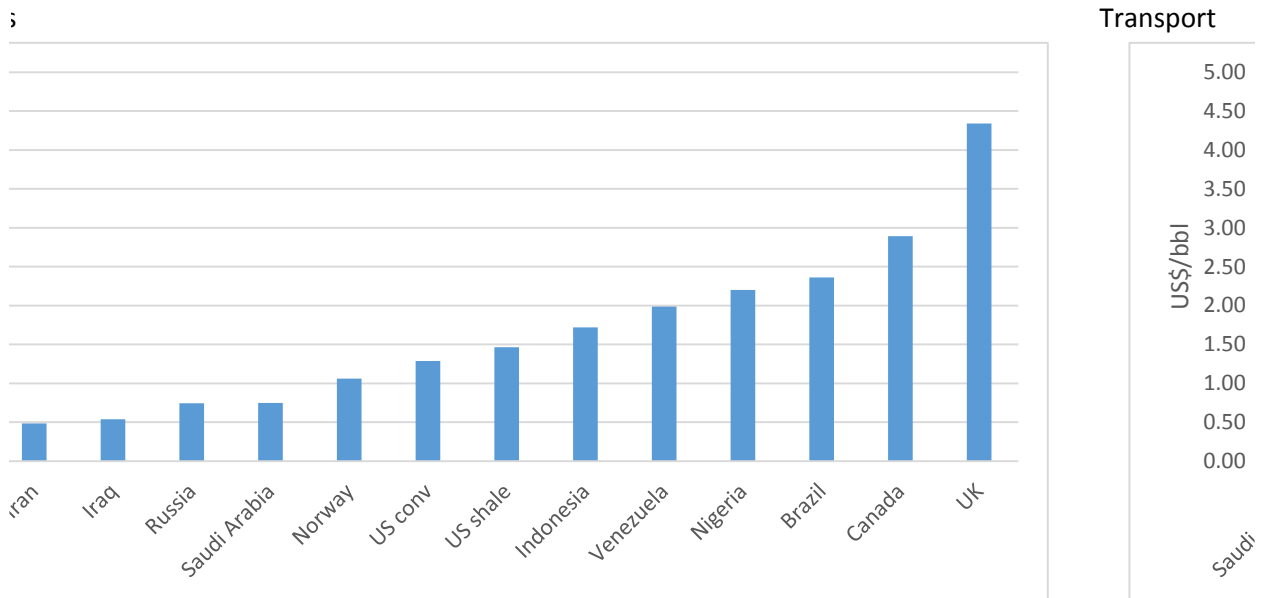


Total (US\$mm)	0.0	0.0	0.0	0.0	0.0	0.0	32.7
----------------	-----	-----	-----	-----	-----	-----	------

Base Case and Sensitivities

1	3.02
2	15%
3	30%
4	-15%
5	-30%

2026	2027	2028	2029	2030	2031	2032	2033
91.9	137.8	183.7	229.7	229.7	229.7	229.7	229.7



2026	2027	2028	2029	2030	2031	2032	2033
60.4	90.6	120.8	151.0	151.0	151.0	151.0	151.0
5.0	7.6	10.1	12.6	12.6	12.6	12.6	12.6

65.4

98.2

130.9

163.6

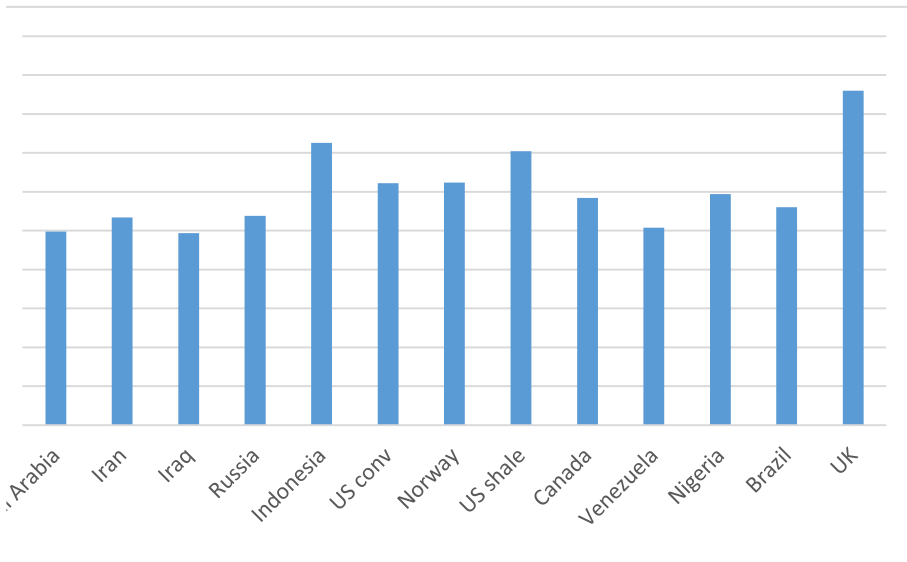
163.6

163.6

163.6

163.6

2034	2035	2036	2037	2038	2039	2040	2041
229.7	229.7	218.2	207.3	196.9	187.1	177.7	168.8



2034	2035	2036	2037	2038	2039	2040	2041
151.0	151.0	143.5	136.3	129.5	123.0	116.8	111.0
12.6	12.6	12.0	11.4	10.8	10.2	9.7	9.2

163.6

163.6

155.4

147.6

140.3

133.2

126.6

120.2

2042

160.4

2042

105.4

8.8

Operating Taxes

Oil Tax

Export Tax	Sliding	of export barrels
Royalty	5.0%	of oil revenues
Other taxes	1.0%	of total revenues

Export Oil Price	58	58	58	58	58	58
------------------	----	----	----	----	----	----

	2019	2020	2021	2022	2023	2024
Export Tax	0.0	0.0	0.0	0.0	0.0	0.0
Royalty	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0
Total	0	0	0	0	0	0

Export Tax

Cut-off point	35	US\$/bbl
Tax	30%	above cut-off point

Export Tax (\$/bbl)	6.9	6.9	6.9	6.9	6.9	6.9
---------------------	-----	-----	-----	-----	-----	-----

Gas Tax

Export Tax	30%	export revenues
Royalty	0.5	US\$/mcf

	2019	2020	2021	2022	2023	2024
Export Tax	0	0	0	0	0	0
Royalty	0	0	0	0	0	0
Total	0	0	0	0	0	0

Total Operating Taxes	0	0	0	0	0	0
-----------------------	---	---	---	---	---	---

Total US\$/boe

Gross Taxes

US\$/bbl

Saudi Arabia	0
Iran	0
Iraq	0.91
Russia	8.44
Indonesia	1.55
US conv	5.03
Norway	0.19
US shale	6.42
Canada	2.48
Venezuela	10.48
Nigeria	4.11

Brazil
UK

6.66
0

Depreciation

Straight Line

Total Capex	6500
Years of Production	18
Annual Depreciation (US\$mm)	361

	2019	2020	2021	2022	2023	2024
Depreciation	0	0	0	0	0	0
<i>Production</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Total	6500					

Unit of Production

Total Reserves	1083
Total Produced	798
Total Capex	6500
Depreciation per barrel	8.15

	2019	2020	2021	2022	2023	2024
Depreciation	0	0	0	0	0	0
Total	6500					

2025	2026	2027	2028	2029	2030	2031	2032	2033
361	361	361	361	361	361	361	361	361
1	1	1	1	1	1	1	1	1

2025	2026	2027	2028	2029	2030	2031	2032	2033
88	176	265	353	441	441	441	441	441

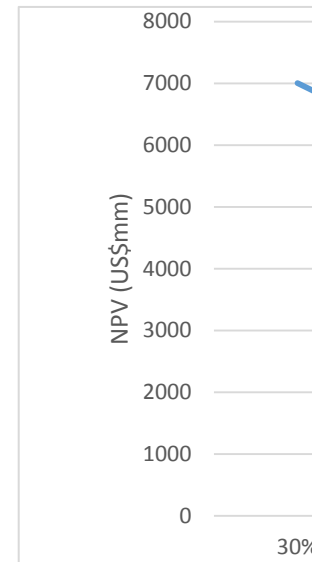
2034	2035	2036	2037	2038	2039	2040	2041	2042
361	361	361	361	361	361	361	361	361
1	1	1	1	1	1	1	1	1

2034	2035	2036	2037	2038	2039	2040	2041	2042
441	441	419	398	378	359	341	324	308

Sensitivities

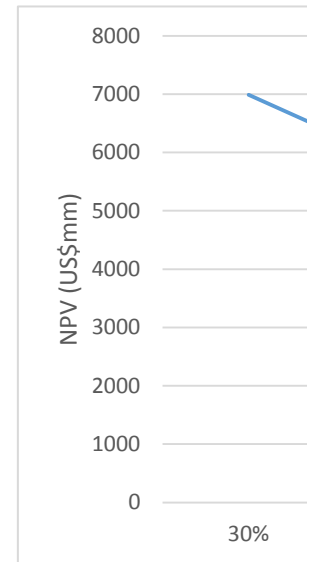
Oil Price

	NPV
30%	7005
15%	5677
0%	4348
-15%	3020
-30%	1692



Production

	NPV
30%	6988
15%	5668
0%	4349
-15%	3029
-30%	1709



Capex

	NPV
30%	2855
15%	3602
0%	4349
-15%	5095
-30%	5842

Opex

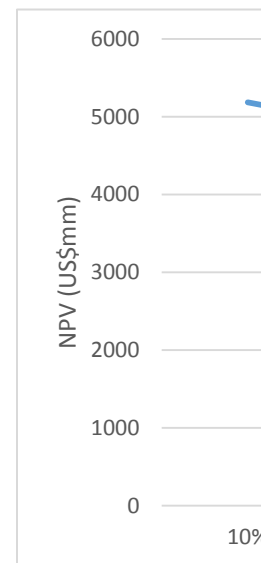
	NPV
30%	3783
15%	4066
0%	4349
-15%	4632
-30%	4914

Corporate Tax Rate

	NPV
10%	5184
15%	4766
20%	4349
25%	3931
30%	3513

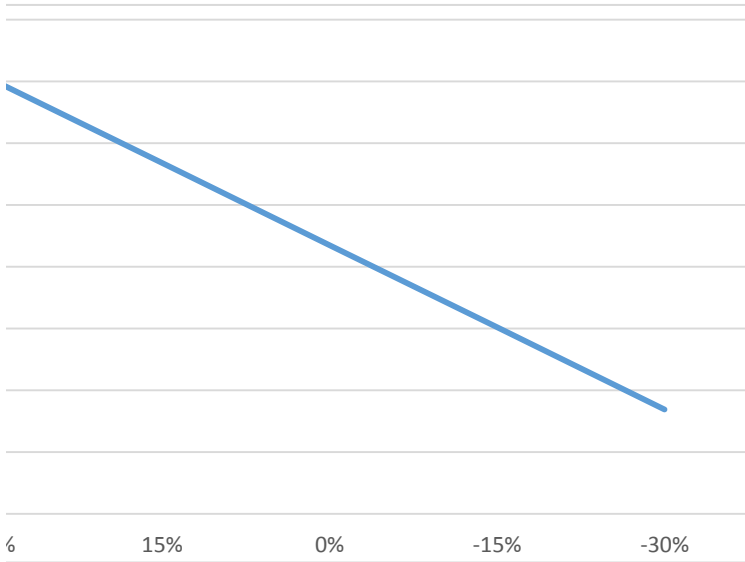
Discount Rate

	NPV
-30.0%	6668
-15.0%	5406
Base	4349
+15%	3427
+30%	2654

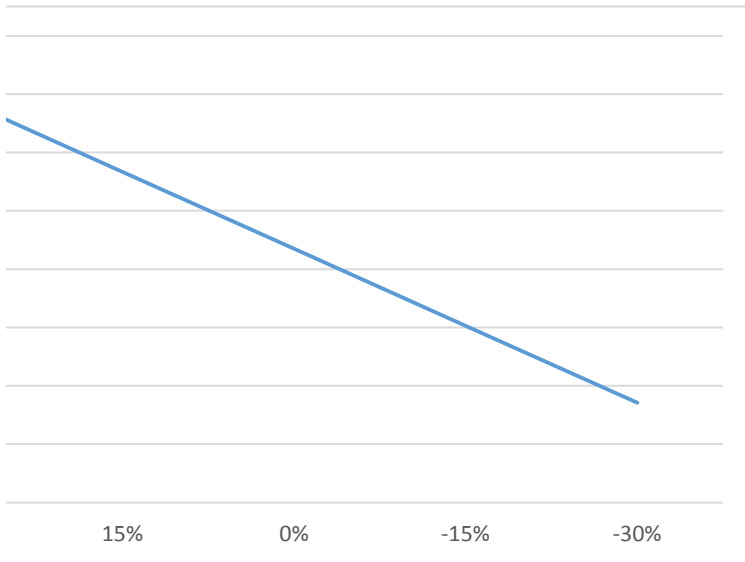


Summary

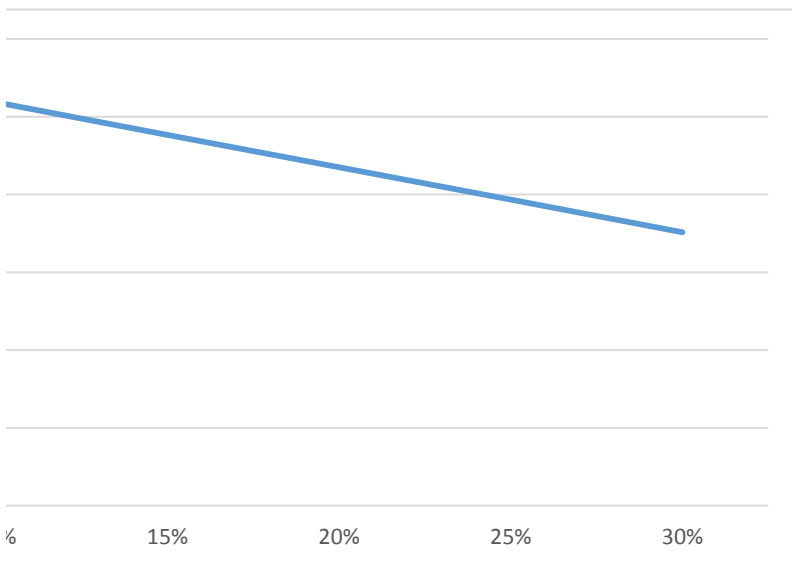
	Oil Price	Production Capex	Opex	Corp Tax	Disc. Rate	
Downside	1692	1709	2855	3783	3513	2654
Low	3020	3029	3602	4066	3931	3427
Base	4348	4349	4349	4349	4349	4349
High	5677	5668	5095	4632	4766	5406
Upside	7005	6988	5842	4914	5184	6668



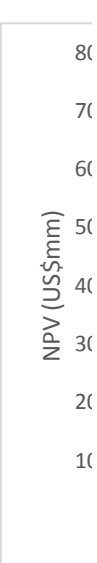
Oil Price

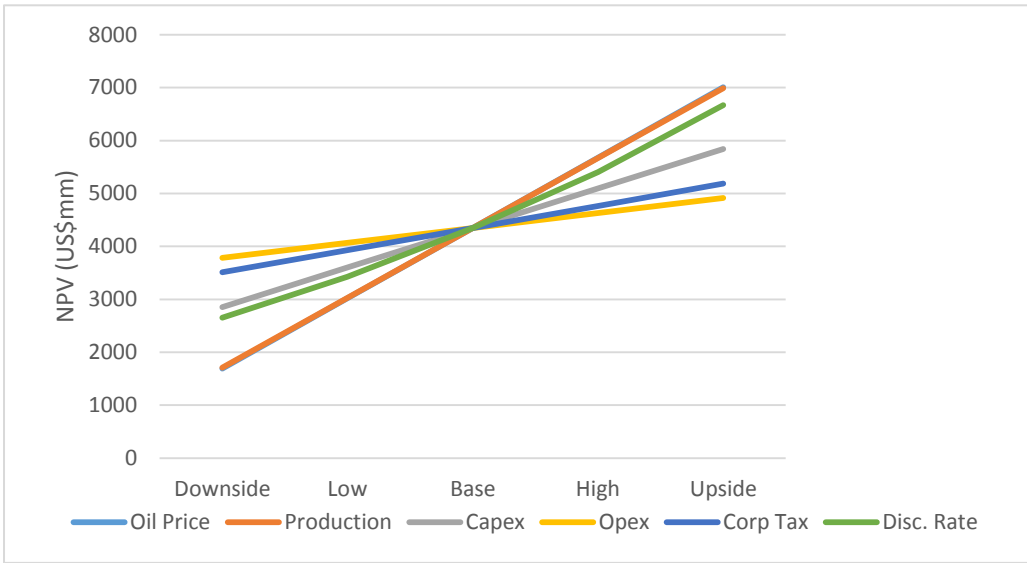


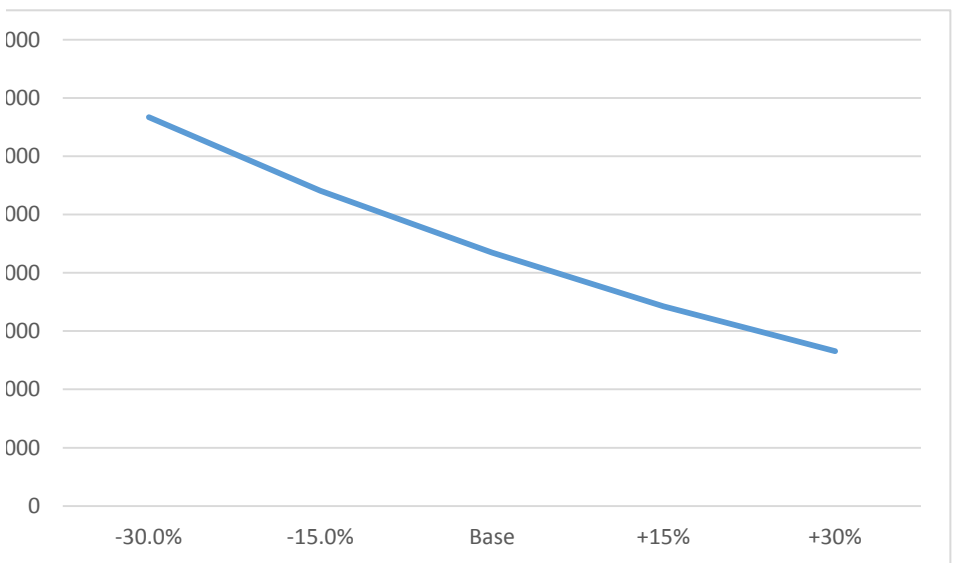
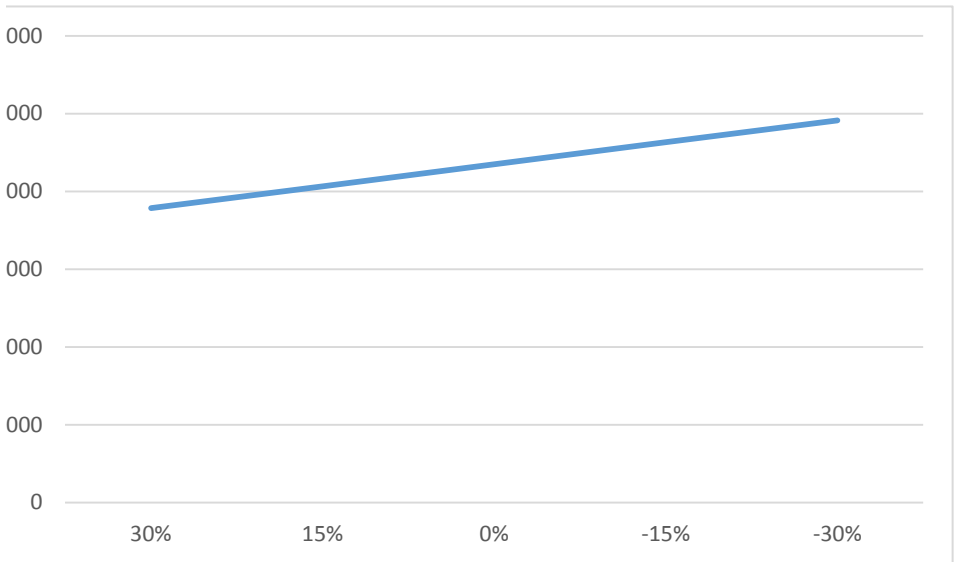
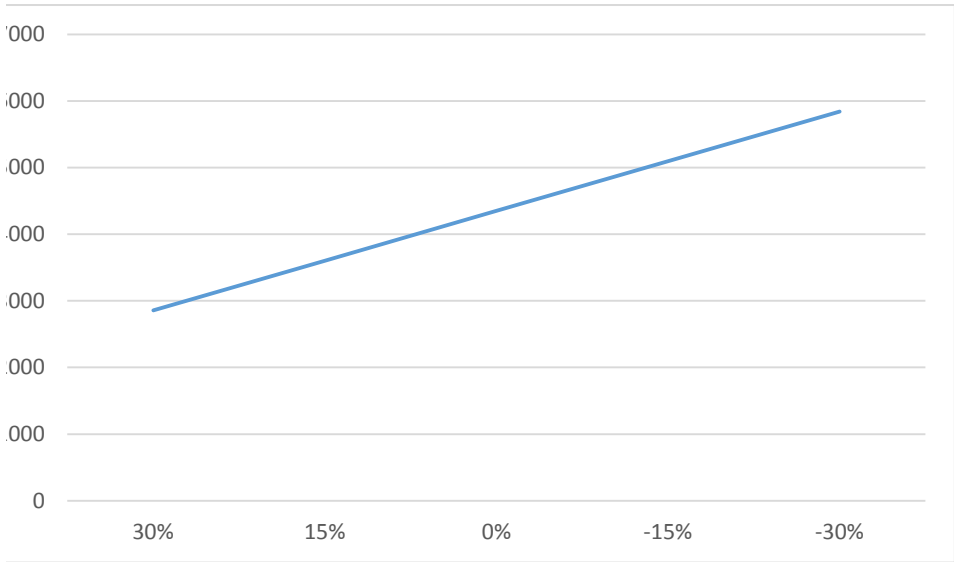
Production



Tax Rate







Exploration Well Analysis

Chance of Success	0%
Cost of Well	0 US\$mm
NPV of Success	6668
Dry Hole	0.0
Successful Well	0
EMV	0

PSA Regime

	2017	2018	2019	2020	2021	2022
Company Revenues	0	0	0	0	0	0
Operating Costs	0	0	0	0	0	0
Transport Costs	0	0	0	0	0	0
Operating Taxes	0	0	0	0	0	0
EBITDA	0	0	0	0	0	0
Depreciation	0	0	0	0	0	0
EBIT	0	0	0	0	0	0
Tax on EBIT	0	0	0	0	0	0
<i>Corporate Tax Rate</i>	20%					
Post tax cashflow	0	0	0	0	0	0
CAPEX	0	-875	-1000	-1000	-1000	-1000
Free Cashflow (FCF)	0	-875	-1000	-1000	-1000	-1000
Cumulative FCF	0	-875	-1875	-2875	-3875	-4875
Discount Rate	10%					
Discount Factor	1.10	1.21	1.33	1.46	1.61	1.77
Discounted Cashflow (DCF)	0	-723	-751	-683	-621	-564
NPV (\$mm)	-36					
IRR (%)	10%					

Revenue Calculation

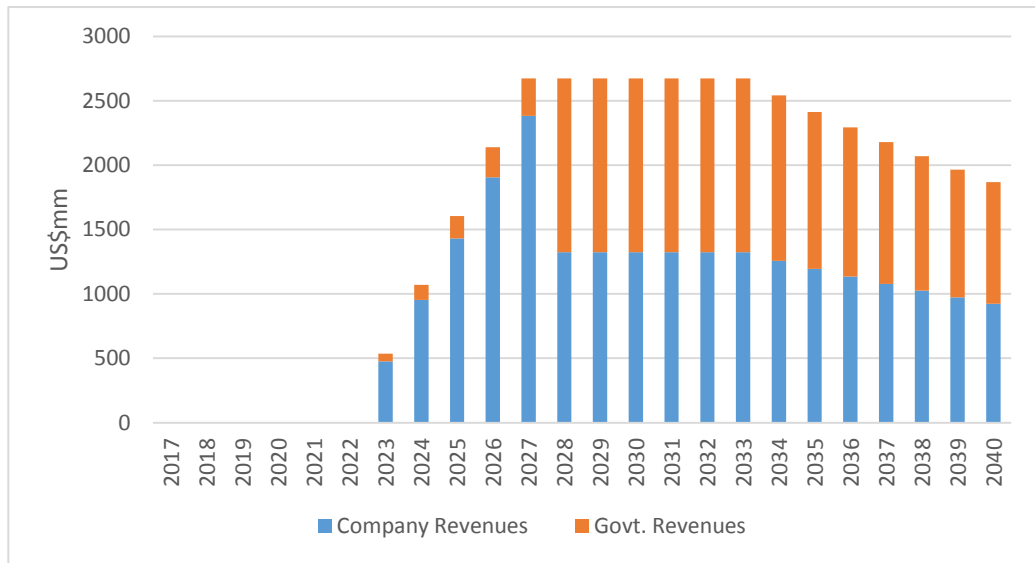
	Company	Govt				
Cost Oil	80%					
Profit Oil	50%	50%				
	2017	2018	2019	2020	2021	2022
Total Revenues	0	0	0	0	0	0
Govt Royalty	0	0	0	0	0	0
Taxable Revenues	1%	0	0	0	0	0
Cost Oil						
80% of Revenues	0	0	0	0	0	0

Accumulated Cost Oil	0	0	0	0	0	
Annual Costs	-875	-1000	-1000	-1000	-1000	
Accumulated Costs	-875	-1875	-2875	-3875	-4875	
Payback	0	0	0	0	0	
Cost Oil to Company	0	0	0	0	0	
Profit Oil	0	0	0	0	0	
Profit Oil						
Company	0	0	0	0	0	
Govt	0	0	0	0	0	
Total Company Revenues	0	0	0	0	0	
	2017	2018	2019	2020	2021	2022
Company Revenues	0	0	0	0	0	0
Govt. Revenues	0	0	0	0	0	0

2023	2024	2025	2026	2027	2028	2029	2030	2031
477	953	1430	1906	2383	1324	1324	1324	1324
-46	-92	-138	-184	-230	-230	-230	-230	-230
-33	-65	-98	-131	-164	-164	-164	-164	-164
0	0	0	0	0	0	0	0	0
398	796	1194	1592	1990	931	931	931	931
-88	-176	-265	-353	-441	-441	-441	-441	-441
310	619	929	1239	1549	489	489	489	489
-62	-124	-186	-248	-310	-98	-98	-98	-98
336	672	1008	1344	1680	833	833	833	833
-400	-300	-300	-300	-23.2	-23.2	-23.2	-23.2	-23.2
-64	372	708	1044	1657	810	810	810	810
-4939	-4567	-3859	-2815	-1158	-349	461	1271	2080
1.95	2.14	2.36	2.59	2.85	3.14	3.45	3.80	4.18
-33	174	300	403	581	258	235	213	194

2023	2024	2025	2026	2027	2028	2029	2030	2031
535	1070	1605	2140	2675	2675	2675	2675	2675
5	11	16	21	27	27	27	27	27
530	1059	1589	2118	2648	2648	2648	2648	2648
424	847	1271	1695	2118	2118	2118	2118	2118

424	1271	2542	4236	6355	8473	10591	12709	14828
-479	-457	-536	-615	-416	-416	-416	-416	-416
-5354	-5811	-6347	-6962	-7378	-7794	-8211	-8627	-9044
-4930	-4540	-3805	-2725	-1023	678	2380	4082	5784
0	0	0	0	0	1	1	1	1
424	847	1271	1695	2118	0	0	0	0
106	212	318	424	530	2648	2648	2648	2648
53	106	159	212	265	1324	1324	1324	1324
53	106	159	212	265	1324	1324	1324	1324
477	953	1430	1906	2383	1324	1324	1324	1324
2023	2024	2025	2026	2027	2028	2029	2030	2031
477	953	1430	1906	2383	1324	1324	1324	1324
58	117	175	233	292	1351	1351	1351	1351



2032	2033	2034	2035	2036	2037	2038	2039	2040
1324	1324	1258	1195	1135	1078	1024	973	925
-230	-230	-218	-207	-197	-187	-178	-169	-160
-164	-164	-155	-148	-140	-133	-127	-120	-114
0	0	0	0	0	0	0	0	0
931	931	884	840	798	758	720	684	650
-441	-441	-419	-398	-378	-359	-341	-324	-308
489	489	465	442	420	399	379	360	342
-98	-98	-93	-88	-84	-80	-76	-72	-68
833	833	791	752	714	678	644	612	582
-23.2	-23.2	-23.2	-23.2	-23.2	-23.2	-23.2	-23.2	-23.2
810	810	768	728	691	655	621	589	558
2890	3699	4467	5196	5886	6541	7163	7752	8310
4.59	5.05	5.56	6.12	6.73	7.40	8.14	8.95	9.85
176	160	138	119	103	89	76	66	57

2032	2033	2034	2035	2036	2037	2038	2039	2040
2675	2675	2541	2414	2293	2178	2069	1966	1868
27	27	25	24	23	22	21	20	19
2648	2648	2515	2390	2270	2157	2049	1946	1849
2118	2118	2012	1912	1816	1725	1639	1557	1479

16946	19064	21076	22988	24804	26529	28168	29726	31205
-416	-416	-397	-378	-360	-344	-327	-312	-298
-9460	-9877	-10273	-10652	-11012	-11355	-11683	-11995	-12293
7486	9187	10803	12336	13792	15174	16486	17730	18912
1	1	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0	0
2648	2648	2515	2390	2270	2157	2049	1946	1849
1324	1324	1258	1195	1135	1078	1024	973	925
1324	1324	1258	1195	1135	1078	1024	973	925
1324	1324	1258	1195	1135	1078	1024	973	925
2032	2033	2034	2035	2036	2037	2038	2039	2040
1324	1324	1258	1195	1135	1078	1024	973	925
1351	1351	1283	1219	1158	1100	1045	993	943

Questions

Real and Nominal

	2018	2019	2020	2021	2022	2023
Q1	100	102.5	105.1	107.7	110.4	113.1

Q2

	2018	2019	2020	2021	2022	2023
Real	60	60	60	60	60	60
Nominal	60	61.20	62.42	63.67	64.95	66.24

Inflation 2%

Real +1%	60	60.60	61.21	61.82	62.44	63.06
----------	----	-------	-------	-------	-------	-------

NPV and DCF

Q1

	2018	2019	2020	2021	2022	2023	2024	2025
US\$m	100	100	100	100	100	100	100	100
Discount factor	1.10	1.21	1.33	1.46	1.61	1.77	1.95	2.14
Discount Rate	10%							
DCF	91	83	75	68	62	56	51	47
NPV	614							
NPV Excel	614							

Q2

	2018	2019	2020	2021	2022	2023	2024	2025
Capex	-187.5	-187.5	-187.5	-187.5	-187.5			
Cashflow						100	150	200
Net Cashflow	-188	-188	-188	-188	-188	100	150	200
Discount Factor	1.1	1.21	1.33	1.46	1.61	1.77	1.95	2.14
Discount Rate	10%							
DCF	-170	-155	-141	-128	-116	56	77	93
NPV	381							
NPV Excel	381							
IRR	16%							
Cost Inflation	1.25							

2026	2027
100	100
2.36	2.59
42	39

2026	2027	2028	2029	2030	2031	2032	2033	2034
250	300	300	300	300	300	300	270	243
250	300	300	300	300	300	300	270	243
2.36	2.59	2.85	3.14	3.45	3.80	4.18	4.59	5.05
106	116	105	96	87	79	72	59	48

2035	2036	2037
219	197	177
219	197	177
5.56	6.12	6.73
39	32	26